

Abstract

An optical amplifier module is provided that contains at least one optical amplifier. The module includes an internal housing having an outer dimension substantially equal to an outer dimension of an internal fiber splice housing of an undersea optical fiber cable joint. The internal housing includes a pair of opposing end faces each having a retaining element for retaining the internal housing within an outer housing of the undersea optical fiber cable joint. The internal housing also includes a sidewall interconnecting the opposing end faces, which extends between the opposing end faces in a longitudinal direction. The sidewall, which is formed from a thermally conductive material, includes a receptacle portion having a plurality of thru-holes each being sized to receive a passive optical component employed in an optical amplifier. The module also includes at least one circuit board on which resides at least one voltage dropping element for conveying voltage from the conductor to electronics also residing on the circuit board and associated with the optical amplifier. An isolated electrical path provides electrical power received from a conductor in at least one optical fiber cable to the at least one circuit board. The voltage dropping element is in thermal communication with the sidewall.